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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WARREN, DAVID S

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/733,257

Applicant(s)

KIRKEBY ET AL.

Examiner

David S. Warren

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-16, 19-27 and 30-34 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 17, 18, 28, 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 4/9/04; 12/12/03.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 4, 7 – 16, 19 – 27, and 30 – 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sall et al. (2003/0171936) in view of Nafeh (5,343,251).

Regarding claim 1, Sall discloses the use of receiving an audio signal (2; fig. 1) containing music and non-music (see the first sentence of paragraph six), segmenting the audio into frames (21; fig. 3), performing spectral analysis (the statistical feature vectors consist of mean values of formant frequencies; e.g., see Sall's claim 8), identifying segment start and stop times (the segments of homogenous data, e.g., speaker identity; paragraph [0013], will inherently have a stop and start time), segments are based on thresholds (141, fig. 4; derived from features vectors that define characteristics of the audio stream; paragraph [00034]). Sall does not disclose the use of selectively recording music by passing each frame through a filter bank, computing a modified spectral flux value, nor the use of recording a portion of the audio stream. Nafeh discloses the use of selective recording audio (col. 7, lines 47 – 57), the use of segmenting audio via a filter bank (30) where each center frequency is approximate proportional to the center frequency, i.e., Nafeh discloses center frequencies of 375 Hz, 750 Hz, 1500 Hz, 3000 Hz, etc. – the Examiner maintains that the bandwidths are

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approximately proportional to the bandwidth, that is, as the center frequency increases, so does the band width (see the paragraph bridging columns 3 and 4). While Sall does not explicitly teach the use of using spectral flux values to segment audio streams, Sall does disclose that the use of these values is well-known (see Sall's paragraph [0018]). It would have been obvious to one of ordinary skill in the art to combine the teachings of Sall and Nafeh to obtain the audio stream segmenting method using a filter bank and recording the segments. The motivation for making this combination is that the use of filter banks is a widely used method for creating frequency sub-bands used to enhance frequency analysis – this will allow greater and more accurate data extraction by which to increase the accuracy of Sall's system. Regarding claims 2, 14, and 25, neither Sall nor Nafeh disclose the use of five IIR filters. Nafeh discloses the use of five filters. IIR filters are one of the most common and simplest filters known (e.g., a single resistor and a single capacitor having a common node). Therefore, Official Notice is taken that the use of IIR filters is notoriously well-known and certainly within the scope of one of ordinary skill in the art. Regarding claims 3, 15, and 26, Nafeh discloses the three ranges of center frequencies; 375, 750, 1500, 3000, 6000 Hertz; and 250, 500, 1000, 2000, and 4000 Hertz; and 400, 800, 1600, 3200, and 6400 Hertz. These values are deemed to be functionally equivalent to those of Applicant's claims 3, 15, and 26. Regarding claims 4, 16, and 27, Sall discloses the use of "stationary intervals" [0049] for creating the audio segment boundaries. The Examiner maintains that these "intervals" are time intervals. Furthermore, Sall discloses using four vectors of four frames, each 10 – 20 msec, for a total of 40 – 80 msec, this is deemed to be a minimum time for

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which segmentation can occur and thus recording. Regarding claims 7, 19, and 30, Nafeh discloses the use of storing (in a memory) and buffering the segmented data (see paragraphs (col. 6, lines 51 – 66 and col. 5, lines 52 – 63, respectively). The Examiner acknowledges that Nafeh buffers parameters of the audio stream (i.e., not the stream itself), however, as broadly interpreted, this is deemed to be functionally equivalent since the buffering is used for identical purposes (albeit with different contents – see fig. 1A). Regarding claim 8, the method steps are similar to claim 1, except the frames are digitized, Sall discloses “an input sequence of the digital samples is divided into the sequence of short...frames 21” (see paragraph [0035]). Regarding claims 9 and 20, both Sall and Nafeh disclose the use of using data averages over a series of frames (Sall discloses cepstral coefficient averages, paragraph [0017]; and Nafeh discloses luma value averages), the Examiner maintains that (since Sall discloses the use of spectral flux values to assess an audio stream [0018] and the use of “statistical analysis” [0043]) that the use of an average spectral flux would be within the scope of one of ordinary skill in the art. Regarding claims 10, 21, and 31, Sall discloses the use of receiving a radio broadcast (paragraphs [0033] and [0034]), calculating a value of a feature for each of a plurality frames (i.e., the vector feature, see element 25, fig. 3), and identifying start and end points of a segment based on threshold values (see paragraphs [0054] and [0055]). Sall does not disclose the use of recording a portion (i.e., a segment) of the audio transmission bounded by the start and stop points. Nafeh discloses segmenting an audio stream and recording the segment (col. 7, lines 47 – 57). It would have been obvious to combine the teachings of Sall and Nafeh to obtain a

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means to segment an audio stream by the use of threshold values and record the segments. The motivation for making this combination would be to allow a user to record only a specific speaker (this is suggested by Sall, paragraph [0007]). Regarding claims 11 and 32, these limitations have been discussed supra with respect to claim 1. Regarding claims 12, 23, and 33, these limitations have been discussed supra with respect to claims 7, 19, and 30. The limitations of claim 34 have been discussed supra except the use of a network interface and a processor coupled to the receiver. The Examiner interprets (in accordance with Applicant's specification) a network interface to be that portion of Nafeh that interfaces with the audio stream (e.g., 22; fig. 1A). Sall discloses the use of a processor (3, fig. 3) sufficient to provide audio segmentation.

Allowable Subject Matter

3. Claims 5, 6, 17, 18, 28, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not disclose the use of determining minimum, maximum, or reset times to modify recording instructions or spectral flux threshold values.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The documents to Berg (2002/0120456), Crockett

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(2004/0165730), and Xu (2006/0065102) disclose the use of segmenting audio data streams suitable for recording.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Warren whose telephone number is 571-272-2076. The examiner can normally be reached on M-F, 9:30 A.M. to 6:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-2837. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dsw


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